DOCUMENT RESUME

ED 121 193 HE 007 640

AUTHOR Weinstock, Ruth
TITLE British Open University: Media Used in Context.
INSTITUTION Educational Facilities Labs., Inc., New York, N.Y.; Society for Coll. and Univ. Planning, New York, N.Y.
PUB DATE Apr 75
NOTE 7p.
AVAILABLE FROM Society for College and University Planning, 3 Washington Square Village, Suite 1-A, New York, New York 10012 ($1.00)
JOURNAL CIT Planning for Higher Education; v4 n2:3/5 Apr 1975

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Academic Achievement; Cost Effectiveness; *Curriculum Development; *Educational Innovation; *External Degree Programs; *Higher Education; Independent Study; Instructional Innovation; *Media Selection; Progressive Education
IDENTIFIERS *Open University

ABSTRACT

The experience of an open university with the uses of technology in higher education is documented. The emphasis is on its exemplary use of educational technology in context. Examination of the details of how the Open University employs media to serve a large dispersed student body may benefit others who plan to expand or modify their own uses of educational technology. Details are given on traditional and innovative curricula, study materials and support activities, local study centers, teachers and course production, the integration of the media, student performance, central university facilities, and costs. Certain features considered to be significant factors in the success of the university are outlined along with existing or potential problems. (Author/LBH)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

• planning for higher education

Vol. 4, No. 2: 3/5 April 1975

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY

Soc. for College & University Planning

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE NATIONAL INSTITUTE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED121193

HE007 640

Educational Technology Revisited

PROFILE 2

British Open University: Media Used in Context

This profile of the British Open University is offered by Educational Facilities as one of a series to document the experience with the uses of technology in higher education. Many Americans are already familiar with some aspects of the Open University (the only foreign case in the series) but the emphasis here is on its exemplary use of educational technology in context. A look at the details of how the Open University employs media to serve a large dispersed student body may benefit others who plan to expand or modify their own uses of educational technology. This report, written by Ruth Weinstock, research associate at EFL, and the other reports in this series are supported by a special grant to EFL from The Ford Foundation.

Perhaps the most widely acclaimed nontraditional study program currently underway is the British Open University. It has been described as "the most ambitious effort yet known to harness the educational potential of radio and television, wed them to a system of independent study, and organize the program as a formal degree-granting operation."[1]

Without a doubt, it offers one of the most complete examples of educational technology in context. It employs the most advanced and sophisticated multimedia instructional system in use anywhere to teach large numbers of remotely located students. The use of radio, television, computers, cassettes, and laboratory kits is integral to the instructional design. One of its major administrative divisions is an Institute of Educational Technology — and through it, the use of media is thoughtfully developed to accomplish learning ojectives. Indeed, the important role played by the Institute is expected to influence the direction of the University itself. With regard to this, Armsey and Dahl observe in their book on instructional technology that:

The University almost certainly will also become a center of research in learning theory and curriculum development, thus functioning in accord with the predominant British definition of Educational Technology. No one in the Institute of Educational Technology, an integral part of the Open University structure, seems primarily interested in machines or gadgetry. Since questions of purpose, process, procedure, and substance predominate, the Institute might be called more accurately an institute of educational research.[2]

BOU's Audience

The Open University is a unique institution in other ways. To begin with, it operates an open admissions policy (as its name indicates) in a country characterized by a very selective educational structure. In a society where less than 2% of the population goes on to colleges and universities, it provides an opportunity to those who are denied access to higher education in its traditional forms.

In fact, the idea for the Open University first came into the British public eye as a vote-appeal device for the Labor Party in 1963 and as a recognition that the primary factor differentiating college from non-college youth is often class, not intelligence.

Its political origins do not detract from the fact that it is an important solution to a very real social need. The proof is in the numbers. When it opened, in 1971, there were 43,000 applicants. Since then, the numbers have swelled to a total current enrollment of 64,000 undergraduates and "post-experience" students; at that, in the past year in many of the foundation courses it was necessary to turn away four applicants for every new one enrolled.

The University is aimed primarily at students over age 21. It provides a chance for people who are fully employed to obtain a bachelor's degree. For those already qualified, it offers the chance to update, retrain, and enhance professional skills. Most individuals who enroll do so to improve their job status. For example, about 20% of the students are teachers who can increase their chances for advancement by obtaining a 4-year degree. (At present, there are roughly a quarter of a million teachers in Britain — more than half the total — who have less than 4-year certification. Thus, their chances of promotion and higher salaries are limited.) About 50% of the students are women.

The University, sold to the taxpayers as an institution for the working class, has been heavily middle class. Blue collar workers comprise less than 10% of the enrollment, but their actual number has increased slightly each year.

The University is made known through newspaper ads and articles, and through responses to direct mail inquiries. There is some hesitation to promote it further since budget cuts have reduced the potential for accepting new students. But people come across shows on BBC television and radio which prompt inquiries and there is word-of-mouth communication about the program. Studies show that about half of the total population and nearly 100% of the teachers in England know about it.

Curriculum: Traditions and Innovations

The thrust of the curriculum is to offer a program comparable to the B.A. degree offerings in all British universities. A significant departure, however, is that much of a student's work is devoted to foundation courses which make a deliberate attempt to interrelate knowledge.

Nevertheless, traditional patterns remain pervasive: the curriculum is structured by the institution. Once a major field is chosen, the student is told what to study and how to study it, and tests and grades are intrinsic to the scene. Thus, aside from the course approach which attempts to integrate otherwise compartmented knowledge, the chief departures from tradition lie in the adult audience served, the part-time option, the self-pacing mode (within the limits of the weekly units), and the sophisticated design of courses based on the principles of educational technology.

There are six broad fields of study: humanities, mathematics, science, social science, educational studies, and technology. To obtain a degree, the student needs six course credits; for the honors degree, eight course credits. (A course may be interpreted as roughly similar to our conventional academic program of six to nine credits per term.) These courses are divided into blocks of 4 to 5 weeks, and then into units of a single week's work. Each week's unit requires a minimum of about 10 hours of work: six hours of self instruction, a half hour of TV, a half hour of radio, a half hour of self-assessment tests, about a half hour for subjective assignments to be graded by tutors, an hour of objective assignments to be graded by computer, and in science and technology, about an hour for home experiments.

The foundation courses in all disciplines are offered each year, along with courses on the second, third, and fourth levels. At present, there are almost 70 undergraduate course offerings.

A student may take a maximum of two courses (gaining two credits) per year, and a B.A. can be obtained in three years, although a student following this line would need to spend, at the very least, about 20 hours each week on studies. At the rate at which students are presently taking courses, the average time to achieve a B.A. degree is five years.

Courses begin in early January of each year and continue for 32 weeks. This timetable allows the University to schedule one week of obligatory attendance by Open University students in school and college spaces which are vacant in the summer. In addition, it gives the University access to academic personnel.

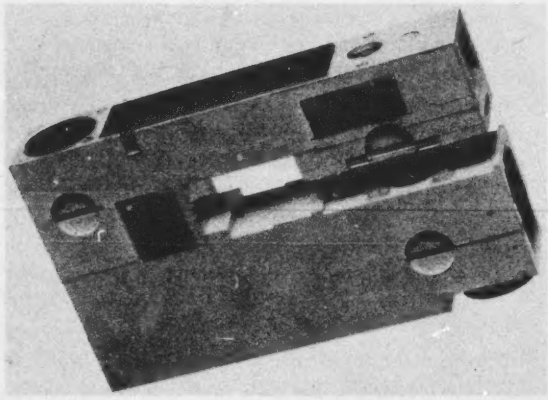
A graceful note is a policy of including a provisional registration period of three months before students must commit themselves to a full year's work and to the full fees. This is in recognition of the fact that many learners need a kind of trial period to determine if the studies are suitable for them.

Study Materials and Support Activities

Essentially, the Open University rests on correspondence courses supplemented by broadcast teaching. But its planners, knowing that passivity and isolation can place a deadly pall on learning, employ a strategy devised to counteract these potentially lethal elements which are present in any external study program. It is a pattern calculated both to actively engage the learner while studying alone—and to bring them in touch with each other.

- At the core of the program are the mailed weekly packages of printed materials. These contain carefully prepared and well-produced paper-bound texts. (These materials, prepared by BOU staff, are of high quality. The science reader and other works have been accepted by many traditional universities as approved texts, and are sold in book stores as well.)[3] The printed materials also refer students to outside readings and are coupled with numerous written and practical exercises and tests. Some of the tests are scored by the students themselves, some are sent to tutors for scoring and comment, and

Planning for Higher Education Vol. 4, No. 2: 3/5 April 1975. ©Society for College and University Planning, 3 Washington Square Village, Suite 1-A, New York, New York 10012. Publications editor: Lawrence F. Kramer. Published in cooperation with Educational Facilities Laboratories, 850 Third Avenue, New York, New York 10022.



The prize-winning McArthur microscope was designed for Open University students taking the foundation course in science. At right, a student works with the microscope.

some are sent to be scored by the university computer.

- Supplementing the printed packages is a range of related material and tasks, including the television and radio broadcasts presented by the BBC. These are aired both during the day and evening.
- Throughout the United Kingdom are scattered 260 study centers to which the student may go for a variety of purposes to be detailed.
- For most courses, students are obliged to attend the one-week residential summer school.
- In science or technology courses, students have a kit of apparatus with which to perform experiments at home.
- If the course deals with technology or mathematics, the student will need to visit one of the study centers to use the large computer terminals located there.
- For some courses, students are supplied with cassette tape recorders on which to play recordings mailed from the university and to record questions themselves to send back to their tutors.

In sum, each course consists of:

1. Correspondence assignments based on Open University texts.
2. TV and radio broadcasts
3. Assessments of course work
4. Discussions at study centers
5. Consultations with counselors and tutors
6. Summer school sessions of seven days for each course

The major tools for at-home study are:

1. A television set which receives the BBC Channel 2 (similar to our educational stations)
2. A radio which receives VHF
3. The printed course materials and correspondece examinations
4. For science, technology, and math courses, various pieces of equipment are sent to the homes of students upon receipt of a deposit. These include such items as a microscope, a logic kit composed of binary and analog devices, a control kit demonstrating feedback principles, a noise meter, a small binary computing device, an electronics kit with oscilloscope, and a signal generator. Upon return of these items to the University in good condition, the deposit, ranging from $24 to $250 depending on the sophistication of the equipment, is refunded.

Local Study Centers

The BOU is divided into 13 regions, each with a regional director who is responsible, among other things, for establishing local study centers. These centers have a number of functions. One of the most important is to provide a place for student interaction. The centers offer the sole opportunity for students to exchange experience, discuss problems, and explore ideas with each other.

Another function is to make possible the face-to-face contact of students with counsellors and tutors. Each center is supervised by a counsellor whose job it is to provide advice, lead discussions after broadcasts, and match students with subject tutors who come at regular intervals to help students with special problems. There is no compulsory attendance. Students go when they like but on nights when tutors are present, the attendance rate is much higher.

The local centers provide access to broadcasts for students who are outside the transmission area. (Some of the stations do not reach parts of Scotland and Wales.)

Students who could not meet the live broadcast schedule or who want more time to study them have access at the centers to equipment and stored programs.

Not all centers are uniformly equipped, but each one has a TV monitor and a radio. Some may have video playback recorders, audio cassettes, or a super 8 cartridge color projector. Every BBC program is copied on film and a library of these films is maintained in the centers. A complete set of radio tapes and printed course materials is not uncommon. Half the centers have computer terminals for the students in the math and technology programs. Most terminals are linked to large central computers by standard telephone and telegraph lines.

The local centers themselves are situated in found space—usually a few rented classrooms in a college. The space is not shared with any part of the program of the building in which it is located: nothing is done to distinguish it as the "Open University." With the exception of the equipment and minimal storage facilities, the space tends to be used as found. Some observers have noted that the formal setting (row-type seating, hard surfaces, constant lighting, etc.) of the rented classrooms is not conducive to informal discussions. A further unfortunate result of the use of found space is that when the traditional colleges close for holidays, the Open University students have no place to meet.

Teachers and Course Production

Professors are drawn from the ranks of British academic institutions; the plan has been that most will serve on the Open University faculty for several years before returning to their own or other institutions.

The BBC functions as a close partner in the enterprise. It produces all the Open University's audio and video tapes for broadcast and cassettes (on a fixed cost contract). Its Controller of Educational Broadcasting is a member of the University Council and more than a dozen of its people are members of the University Senate.

Courses are produced by instructional design teams made up of professors, instructional designers from the Institute of Educational Technology, and radio/television producers from the BBC. A team is responsible for everything connected with the course: content, production, printed units—all of the materials and things of learning. Thus, technology is systematically applied in the total context of instruction: one medium is weighed against another and selected on the basis of what makes the most sense for a given teaching/learning objective and the environment in which it will be used.

The Integration of the Media

The various media are wedded so that the sum is greater than the parts, as explained by illustrations from courses themselves:

- In some subject areas, telecast programs are vital for performing assignments in the printed correspondence texts. Typically, in science courses, students are asked to turn to a page in the text and to enter instrument readings and other responses. The course materials are designed with deliberate gaps to be filled from information presented in the telecasts. Students outside the transmission area would have difficulty doing the required work for credit in science if no provision were made for them through film and audio tape replay facilities at the study centers.
- In another science program, atmospheric pollution readings taken by several thousand students all over the country are collated and discussed. References are made to correspondence materials, to the home experiment kits, and to the correlated radio program of the prior week. In this kind of telecast, last minute production allows the results of the survey to be communicated to students while the topic is still hot and relevant to their studies.
- Another approach demonstrates the joining of TV, radio, books, and audio tapes. A unit in the humanities foundation course deals with the method and structure of D.H. Lawrence's novel, *The Rainbow*, and with Lawrence's criticism of industrial society. Students read the book with the help of a study guide. For background, they view a well-produced TV documentary of the "Civilization" type. The radio program for the week is a general talk about personal relationships in the book, and is accompanied by an extract from a recording of Bertrand Russell's memories of Lawrence. The correspondence materials contain extracts from Lawrence's *Twilight in Italy*.
- Learning about computing, an essential part of mathematics courses, is facilitated by television. Students are often apprehensive about using the terminals for the first time, so the university has prepared two television programs to introduce them to the experience. In the first, students are told about the keyboard and how the terminal is linked to a central computer. In the second, they are shown how to try out the machine.
- In a social science course, "Decision-Making in Britain," students are asked to interview local industrialists. For many, this is a difficult task. Before they do it, they view a TV program in which two students talk about how they did the work and how they felt about it.
- In contrast to television programs which need extensive production facilities and are usually prepared far in advance of a broadcast, radio can be used on short notice. Feedback from tutors on difficulties students are having are incorporated into quick response radio broadcasts. Radio is also used for the music included in the humanities courses.

Re-use of Courses.

Courses are planned to be used several times, but professors who participate in the development of any course have the opportunity to alter parts of recorded programs. The current policy calls for complete

replacement of courses after about five years of use, sometimes through introduction of a brand new course and sometimes by a rolling rewrite process. As the mainstay of the curriculum, the foundation courses are the most frequently revised.

Open University materials have been so highly acclaimed that there has been much interest in their use by American institutions seeking to extend learning opportunities. In the fall of 1972 selected foundation courses were imported to three American institutions—the University of Houston, University of Maryland, and Rutgers—for a one-year trial to test their appropriateness for American students. Now, there are more than 20 American institutions offering Open University programs either as a part of a course or as a complete course.[4]

Student Performance

While it is still too early to look at student performance in relation to degrees awarded and the time it takes to do so, it is known that there is a 10% to 25% drop-out of first-year students. Data on students who enrolled in the foundation courses the first time they were offered show that 85% passed the examinations in the humanities, 80% in the social sciences, 70% in science, and 60% in mathematics. As compared with other remote study programs, the retention rate is exceptionally high.

Central University Facilities

All management operations emanate from an administrative center located near the new town of Milton Keynes, about an hour from London. The main building is in an old but renovated manor house known as Walton Hall, which serves as the center of the physical complex. The surrounding buildings, designed as permanent construction, were built at considerable cost. They contain faculty offices together with a library, laboratories, meeting rooms, and dining facilities; a publications unit, a data processing unit; and a mail handling unit, including an official post office.

"Somehow," observed one American architect returning from the center, "the fixed nature of these traditionally designed facilities seems incongruous with the dynamic nature of the Open University concept."

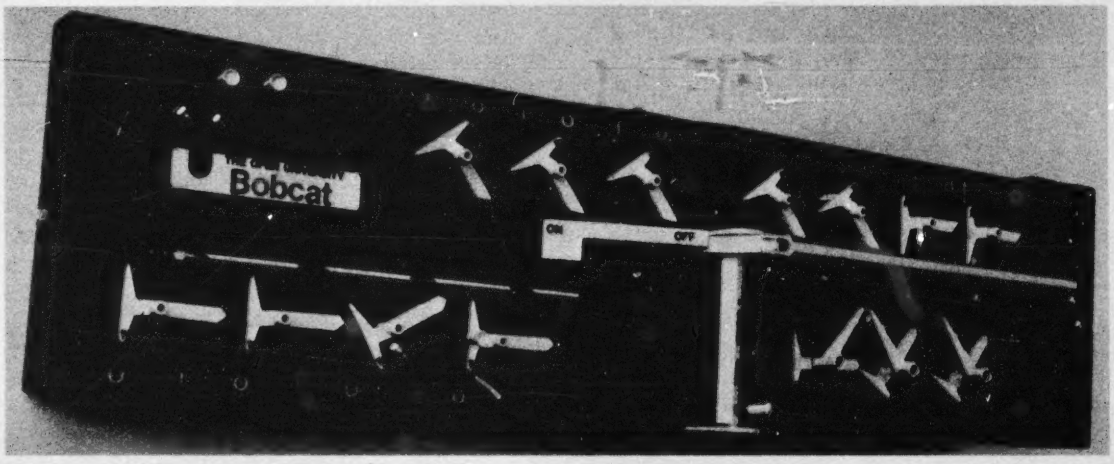
In addition to the full-time staff of some 450 academics at the central headquarters, there at 1,500 part-time counsellors and 3,000 tutors. Fifteen hundred full-time administrative and clerical workers at both the central headquarters and regional centers provide managerial and support services.

Costs

The capital costs of establishing the Open University were about $12 million. Annual operating costs have increased from year to year as enrollments and programs have grown, starting with $8.8 million and now reaching $41 million. The cost to the student is just under $550 for an entire degree program. (Many students are reimbursed, however, sometimes totally. The local education authorities are legally obliged to provide educational opportunities; where they do not operate local programs, they assume financial responsibility for students who must go elsewhere. Many employers also contribute voluntarily to reimbursement of tuitions.)

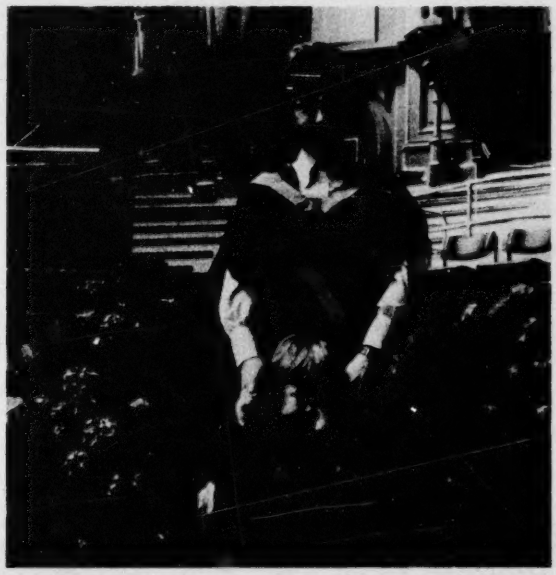
Of the annual budget, about 22% is assigned to production of radio and television programs. The production cost of each TV program averages out to about $12,750, excluding the salaries of academic staff and transmission costs. Production cost of each radio program is about $700. Total costs for correspondence texts, and salaries for tutors and counsellors amount to roughly the same as the radio and TV production costs per year—22%.

Comparative costs are difficult to ascertain but the following two samples indicate the nature of the cost differential between Open University courses and their traditional counterparts. In 1971 the cost of providing an Open University foundation level Humanities course for one student for one year was $130 based on an enrollment of 40,000, compared to an equivalent cost of



The Bobcat is a binary computer designed by BOU staff for technology students.

$940 for a residential student in a university setting. For an Open University advanced level physics course, the cost ranged between $350 and $500 compared to $1500 in a traditional campus setting. Even if the average Open University student spends twice as long obtaining the degree, the cost of educating each Open University student is one-fourth to one-third that of educating a student in the traditional fashion.



Graduation day for a typical British Open University student: a young mother.

Elements of Success

Though the Open University is only now in its fourth yea of operation, certain features are considered to be significant factors in its success thus far:

- Total commitment to a full college degree program is backed by government funding for production, delivery, and evaluation (as compared to Chicago TV College which is but one segment of a larger community college system and which has to share its budget accordingly).
- The local study centers make possible personal contact between students and counsellors, who encourage them through difficult times, and between students and tutors, who offer remedial assistance. In addition, the student interaction in tutorial groups combines intellectual and social stimuli with mutual help. This has helped to prevent the attrition in initial enrollments, which tends to be substantial in remote studies.
- The strategy of using instructional design teams to integrate all the varied components in each course makes for well articulated, unified learning units. (The existence of the Institute of Educational Technology is important in this regard. The Institute provides curriculum leadership and a staff devoted exclusively to structuring the design of courses. Experts of this type are not generally present on American campuses.)
- The close partnership of the BBC through its organizational integration in the governing council of the University makes its expertise fully available.
- Sophisticated professional production of television and radio programs makes them appealing and competitive with commercial broadcasting.
- The respected quality of the published materials, which has made them widely available through traditional bookstore outlets, contributes to the recognition and acceptance of the Open University.

Problems—or Potential Problems

Despite the most careful planning, weak spots in the grand design of any new venture, especially one of this magnitude, begin to emerge as the enterprise is subjected to the trial of everyday operations. Some of the more visible ones relate to educational technology:

- There is a lack of flexibility in an integrated multi-media system which is paced on a week-to-week basis. The very scheduling of broadcasts demands attention at the times they are offered. It is true that students can make up missed programs at the study centers, but the burden rests on them to make the effort. Moreover, the weekly programs move ahead inexorably and those who fall behind have trouble catching up.
- Though television and radio are vital components of the learning experience, there is a question as to whether their high cost has been completely justified. The academic staff claims that it spends half its time on the broadcasting component in contrast with the student who spends about 10% with it. There is as yet no evidence that the amount of time and money spent on television and radio adds substantially to the student's learning.
- The complex distribution of the Open University's published materials makes it extremely dependent on the postal system. On average, 10-15,000 packages are mailed out each week; in 1973, a total of 3.6 million packages were dispatched. The postal strike in 1971 nearly created havoc and could do so again.
- Finally, some critics charge that the technological capacity of the Open University is used for doing an old thing in a new way. In their view, too much time is spent on the delivery of facts, and too little on teaching ways to think and to deal with facts. These critics regard the media as tools which must be used much more fully to stimulate initiative and to share experience.

For further information, write to: Open University of the United Kingdom, North American Office, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036

—Ruth Weinstock

[1] *The British Open University in the United States: Adaptation and Use at Three Universities.* Office of New Degree Programs, Educational Testing Service, Princeton, N.J. 08540. 1974

[2] *An Inquiry Into The Uses of Instructional Technology.* James W. Armsey and Norman C. Dahl. The Ford Foundation. 1973.

[3] In the United States, nearly all of the publications, films, and tapes are commercially available from Harper & Row.

[4] Further information is available from the Office of New Degree Programs, Educational Testing Service, Princeton, N.J. 08540.